DOCUMENT RESUME

ED 078 104 UD 013 593

AUTHOR	Halasa, Ofelia; Fleming, Margaret
TITLE	School Camping Program. Disadvantaged Pupil Program Fund, Fund Number 97-8: 1971-1972 Evaluation.
INSTITUTION	Cleveland Public Schools, Ohio. Div. of Research and Development.
PUB DATE	Mar 73
NOTE	55p.
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	Camping; *Classroom Environment; *Compensatory Education Programs; *Day Camp Programs; Disadvantaged Youth; Elementary School Students; Problem Solving; Program Evaluation; Racial Attitudes; Skill Development; Social Attitudes; Social Development; *Summer Programs; Urban Education
IDENTIFIERS	*Ohio

ABSTRACT

The Disadvantaged Pupil Program Fund School Camping Program respresented local educational efforts for the sixth consecutive year to extend classroom learning experiences into the natural environment. The Project sponsored a five-day long resident school-oriented camping program which attempted to offer an integrated balance of typical learning experiences and the natural phenomena which exist in the real world. In addition, it provided unique experiences of learning how to live with one another, of developing attitudes and skills for problem-solving, developing understanding and tolerance of others, etc. The School Camping Program served a total of 3,010 fifth and sixth grade pupils from 53 Title I, 1965 Elementary Secondary Education Act schools during the 1971-72 school year. Ninety teachers were involved in the Project as they accompanied their respective homeroom classes to the program. Approximately 120 pupils and four teachers from three schools, representing varied geographical locations attended the Project weekly. The program of instruction and the curriculum at the Project were structured in such a manner that it would extend typical school-associated learnings. Activities were included to enhance language and reading, social studies, mathematics, and science skills. (Author/JM)

FILMED FROM BEST AVAILABLE COPY

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ED 078104

SCHOOL CAMPING PROGRAM

DISADVANTAGED PUPIL PROGRAM FUND

FUND NUMBER 97-8

1971-1972 EVALUATION

Prepared
By

Ofelia Malasa
Research Associate

Margaret Fleming
Directing Supervisor

Cleveland Public Schools

DIVISION OF RESEARCH AND DEVELOPMENT

March, 1973

UD 013 133

THE 1971-1972 EVALUATION REPORT OF SCHOOL CAMPING PROGRAM WILL ATTEMPT TO RESPOND TO THE FOLLOWING QUESTIONS:

1. TO WHAT DEGREE WERE THE PROCESS OBJECTIVES IMPLEMENTED?

2. WHAT WERE THE OPINIONS OF PARTICIPANTS ABOUT THEIR EXPERIENCES IN THE PROJECT?

3. WHAT WERE THE OPINIONS OF TEACHERS ABOUT THE PROJECT EXPERIENCES OF THEIR PUPILS?

SCHOOL CAMPING PROGRAM

I. INTRODUCTION

A. Needs and Rationale

The adverse influences of over crowded urban city life on children's learning capacity has been the subject of many speculations. Such confinement has been described to provide only a very narrow framework for the child to experience, and consequently, has severely limited the child's capacity for thinking, learning, and ultimately his outlook. These children had also suffered from cultural isolation in the absence of opportunities to get out of their immediate neighborhoods and meet others from different sections of the city.

The Disadvantaged Pupil Program Fund (DPPF) School Camping Program represented local educational efforts for the sixth consecutive year to extend typical classroom learning experiences into the natural environment. The Project sponsored a five-day long resident school-oriented camping program which attempted to offer an integrated balance of typical learning experiences and the natural phenomena which exists in the real world. In addition, it provided unique experiences of learning how to live with one another, of developing attitudes and skills for problem-solving, developing understanding and tolerance of others, etc.

The goal of the 1971-1972 School Camping Program is to provide meaningful experiences to supplement typical school-associated learning, which would help broaden one's general outlook on life. The experiences and atmosphere provided by the School Camping Program, would hopefully develop new understanding and new insights of the natural environment, increase motivation for learning, tolerance and understanding of others, and improve participation and cooperation in group activities.

The following process objectives guided implementation:

1. Participants from selected Title I schools will be provided with unique learning-living experiences within a school-oriented resident camping program.

2. Participants will have opportunities for direct experiences with nature.

3. Participants across different racial, ethnic, and geographical backgrounds will be provided with opportunities to know each other through a variety of structured learning and working situations.

B. Historical Background

The School Camping Program was initiated in the summer of 1966, as a five-week pilot program under Title I funding. Reactions of Project school staff and participants have been positive enough to warrant Project's continued implementation into the regular school year operations. Project operation was funded under Title I until the early part of the 1968-1969 school year when it was transferred to Disadvantaged Pupil Program Fund (DPPF), then known as State House Bill #531. A total of approximately 17,000 to 20,000 inner-city upper elementary school pupils had been served since its creation in May 1966 to date.

Assessment of Project impact over five years of operation indicated that it has been relatively effective in influencing pupils' school attitudes immediately after participation in the Project. Reactions of school and Project staff have continued to be positive and enthusiastic.

C. Summary of Operations

The School Camping Program served a total of 3,010 pupils from 53 Title I Schools during the 1971-1972 school year. The total operational expenditure amounted to $245,442. The Project's per-pupil cost amounted to $82. This per-pupil amount represented additional expenditure beyond the $504 per-pupil general fund expenditure. The combined Disadvantaged Pupil Program Fund (DPPF) and Project per-pupil cost was estimated at $586.[1]

---

[1] General fund per-pupil educational expenditure based on the 1971-1972 Per-Pupil Cost General Fund Educational Expenditure Released by the Office of Clerk-Treasurer.

II. HIGHLIGHTS OF FINDINGS

A. Summary of Key Findings

1. Participants indicated generally positive reactions about their Project experiences based on questionnaire responses and interviews with Project staff. The following key points were noted:

   a. Of 13 statements, the following five statements were reported to have been most influenced by Project experiences:

      - I realized it is possible to learn outside and inside the classroom.
      - I feel more confident about what I can do.
      - I learn to respect the point of view of another person.
      - It is easier to learn when classroom experiences are accompanied by outdoor experiences.
      - I know how it feels to belong to another race.

   b. At least three out of every four participants indicated they favored the approach of the Project in teaching subject areas such as:

      - Ratio and proportion to teach math.
      - Action Book series to stimulate critical thinking and discussion.
      - Map and compass guides to develop basic social studies skills.

   c. Approximately eight to nine out of every ten participants indicated that the Project experience had made them a better 'person' and a better 'pupil' for the following frequently cited reasons:

      - They learned how to get along with peers.
      - Opportunity to get to know other races.
      - New experiences in camping not available in regular school.
      - Gives responsibilities.
      - Learns about the outdoors.

d. Approximately one out of every two participants indicated the Harriet Tubman Tunnel Walk as the most interesting activity in the Project because:

"....it was very exciting and thrilling."

"We learned more about slavery and what they did to be free...."

2. Teachers' reactions to the Project experience of their pupils were equally positive, based on questionnaire responses and interviews. The following points were noted:

a. Of 12 statements of goals, the following four goals were reported to have been attained by Project participation of pupils:

- Broadening of children's environmental contacts.
- Bringing pupils and teacher closer together towards understanding one another.
- Improving pupil's ability to get along with one another.
- Improving cooperation in group activities.

b. The Project activities were described to be responding to the needs of participants. The following activities were frequently listed by teachers as being appropriate:

- Math lessons on ratio and proportion as well as reading materials geared at pupil's level.
- Evening social hour.
- Cabin and dining hall responsibilities.
- Hiking.
- Mess hall.
- Harriet Tubman Tunnel Walk.
- Horse back riding.
- Visit to farm area.

c. Approximately 11 out of 25 teacher respondents pointed out that certain needs of the participants had not been met, in contrast to seven others who felt the opposite. The important needs as encountered are as follows:

- Increasing the desire to learn.

- Need for more time allotted for pupil interaction with regards to human relations.

- Social need to mix with children of a different race.

- Understanding of personal problems, sleeping situations.

- Relating this to the present day troubles of brotherhood with Harriet Tubman experience.

d. Twenty-two out of 25 respondents stressed the need to continue the Project. Some of their comments follow below:

- "Feels program is making progress towards objectives; should be some type of meaningful follow-up or follow-through."

- "Camping experience adds much to educating students' increases in environmental experience; awareness of subject matter usage in daily life decision making."

- "Happiness is smiling faces....and hearing a child say, I wish I lived next door to this camp."

- "Wonderful. But too little time; children take at least three days to adjust to change of environment."

- "Experience helped teacher to know class better."

- "Excellent opportunity for inner-city children to expand their environment; cope with personalities different from their teachers and parents; more beneficial if they could experience mixed camp as well as camps of all Blacks or Whites. Noticed growth of some camp counselors."

- "All students have shown some changes for better. Changes show in their relationship with teacher."

- Harriet Tubman experience was great.

- Camping should be extended down to fifth grade so that if a child couldn't have the experience in the fifth grade they could get it in the sixth grade.

B. Implications and Recommendations

The 1971-1972 School Camping Program provided sixth grade inner-city pupils with unique learning-living experiences. The five-day long school-oriented resident camp program represents a valuable and much needed supplement to typical classroom learning, as it extends and broadens such experiences to include nature and the real world. Effects have been made in this Project to reinforce what has been learned in the classroom. The strength of this Project, however, lies in providing experiences that would not have otherwise been available to this population.

Based on interviews and questionnaire responses, it appears that the effectiveness of School Camping Program lies in its positive influence on general attitudes rather than in acquisition of knowledge. Participants for example, pointed out that learning about themselves as well as about others occurred as a result of Project participation. Teachers' questionnaire responses confirmed pupils' responses as they indicated that Project effectiveness was noted in the attainment of the following goals: increased understanding between teachers and pupils; improving pupil's ability to get along with others and in broadening of children's environmental contacts. That the Project's effect on basic skills was less compared to its effect on attitudes may be a function of the Project content. This may represent an area that needs to be strengthened if the Project and the school staff feel the need for more integration of subject matter content into the Project. The program is realistic and feasible within the limited five-day week of Project participation.

III. PROJECT DESCRIPTION

A total of approximately 3,010 fifth to sixth grade children (1,500 boys and 1,510 girls) from 53 Title I elementary schools attended a five-day resident school-oriented camp program at Hiram House. Ninety teachers were involved in the Project as they accompanied their respective homeroom classes to the five-day long resident camping program. Approximately 120 pupils and four teachers from three schools, representing varied geographical locations attended the Project weekly.

A. Project Operations

The program of instruction and the curriculum at the Project, were structured in such a manner that it would extend typical school-associated learnings. A curriculum guide developed by the Project administrative staff served only as a guide; the basic responsibility of determining what to teach and the instructional strategy utilized was left to the homeroom teacher who accompanied her class to the Project.

Attempts were made to integrate different subject areas into the total Project program. Activities to enhance language and reading, social studies, mathematics, and science skills are described below:

> Language Arts: Opportunities for enhancing vocabulary and writing activities were made as a part of child's regular schedule at camp. Vocabulary activities were structured to stimulate the pupils to become more aware of the new words in the camp and to help them discover the full meaning of concepts through direct experiences, use of resource people and resource books. Writing skills were developed by providing opportunities for children to share experiences through written

communications, e.g. keeping logs and diaries. Library activities were regularly scheduled to stimulate reading as well as to provide opportunities to discuss books.

(Refer to Appendix 1).

Social Studies: Activities designed to develop basic social studies skills were integrated into the program in order to help pupils develop some problem-solving skills within the limited framework of Project experience, and to help them realize their role relative to society and government. Some of these activities included pioneering activities, participation in student government, map-making activities, etc.

(Refer to Appendix 2).

Mathematics: Mathematics skills were enhanced by providing participants with problems directly related to life, e.g. estimating Project's operating expenses. The concepts of ratio and fraction were frequently utilized to help students become aware of using it's numbers for comparison purposes.

(Refer to Appendix 3).

Science: Opportunities were created to enable the participants to apply the scientific methods and approach to problem solving. Technique of observation, hypothesis-testing, experimentation, and discussion were utilized whenever possible.

Several activities were integrated into the daily schedule of the participants including the study of soil, principles of soil conservation, observation of terrain, study of the stars and of weather conditions, hiking, and exploration.

(Refer to Appendix 4).

A typical schedule during the school week camp follows:

8:00	Breakfast
9:00 - 12:00	Classroom Activities (Homeroom Teachers)
12:30 - 1:15	Lunch
1:30 - 4:45	Related Activities (Teacher Assistants)
4:45 - 5:30	Cleanup Time
5:30 - 6:30	Dinner Hour
7:00 - 8:00	Study Hour (Homeroom Teachers)
8:00 - 9:00	Recreation (entire camp)
9:00 - 9:30	Shower Time
10:00	Lights Out

Opportunities to live and work with others across racial and ethnic backgrounds represented the other major component of the School Camping Project. Structured activities were scheduled daily which would allow children to know one another, as well as other adults in the Project.

Implementation of a student government within the School Camping Program provides pupils some direct experiences with democratic processes. Pupils become more aware of others needs and assets, as they develop skills to work out problems or tasks, or to discuss alternatives to problems or tasks presented.

B. Staff Development

Staff development was conducted during the 1971-1972 school year to orient Project and school staff to the program through the following in-service program:

- Three one-week staff orientations with 17 staff (4 Project teachers, 4 teacher assistants, and School Camping nurse) in attendance:

  Staff roles and responsiblities.
  Activity program and implementation.
  Public schools policy and procedures.
  School Camp Project policy.
  Health and safety.
  Planning.
  Staff-student report.

- Five two-hour Home School Teacher Workshops with 90 teachers in attendance:

  Teacher role.
  School camp policy and procedure.
  Health and safety.
  Curriculum.
  Activity.
  Follow-Through.

IV. EVALUATION

The evaluation of the 1971-1972 School Camping Program will focus on assessment of process objectives (see page 2). The report will be addressed to the following questions:

- To what degree were the process objectives implemented?
- What were the opinions of participants about their experiences in the Project?
- What were the opinions of teachers about the Project experiences of their pupils?

Project assessment utilized the following procedures:

- Surveys of participants and teachers.
- Periodic on-site visitation.
- Interviews.

Findings

A. Surveys of pupils.
Summary of pupils' questionnaire responses.

B. Survey of teachers.

SUMMARY OF PUPIL'S QUESTIONNAIRE RESPONSES
ON SCHOOL CAMPING PROGRAM, 1971-1972
(N=344)

I

The following statements represent some ways in which your thinking and feelings may have been influenced by your School Camp experience. Please indicate whether you Agree or Disagree with these statements by putting a checkmark (/) under the appropriate column. (A column for Don't Know has been included for those who are unable to say which).

	Agree	Dis-agree	Don't Know
I like to read more.	53%	22%	25%
I like school better.	45%	34%	21%
I feel more confident about what I can do. *	75%	6%	19%
I have more information about the world.	57%	21%	22%
I understand my teachers better.	61%	18%	21%
Teachers understand pupils better.	46%	28%	26%
I learn to respect the point-of-view of another person. *	73%	10%	17%
I know how it feels to belong to another race. *	66%	12%	22%
I read better.	44%	30%	26%
I realized it is possible to learn outside and inside the classroom. *	79%	12%	9%
It is easier to learn when classroom experiences are accompanied by outdoor experiences. *	67%	11%	22%
I seem to get along better with my classmates.	65%	21%	14%
I am more aware of the world beyond my own immediate environment.	58%	15%	27%

The following five statements appeared to have been most influenced by Project participation:

- I realized it is possible to learn outside and inside the classroom.
- I feel more confident about what I can do.
- I learn to respect the point of view of another person.
- It is easier to learn when classroom experiences are accompanied by outdoor experiences.
- I know how it feels to belong to another race.

SECTION II

1. List the most interesting experience you had at the School Camping Program during the 1971-1972 school year.

   The most interesting School Camping experiences included the following:

Harriet Tubman	49%
Hiking	16%
Horse riding	10%
Others (Food, talent show, games, evening activities)	25%

2. Why was it interesting?

   Approximately five out of every ten respondents indicated the Harriet Tubman Tunnel Walk represented the most interesting experience because:

   "....it was very exciting and thrilling."

   "We learned more about slavery and what they did to be free...."

3. Did your experiences at the School Camping Program make you a <u>better person</u>?

   86% Yes 14% No

   The 86% pupils indicated that they became a better person because:

   - They learned how to get along with peers.
   - Opportunity to get to know other races.
   - New experiences in camping not available in regular school.
   - Gives responsibilities.
   - Learns about the outdoors.

   It is significant that the 14% who indicated no, hardly commented why they felt this way.

4. Did your experiences at the School Camping Program make you a <u>better pupil</u>?

   86% Yes 14% No

   Responses were almost identical to Item Number 3.

5. What do you think of the Action Books used for reading?

   Approximately 74% indicated the Action Books to be very helpful and interesting.

6. What do you think of the way math was taught at camp?

   Approximately 72% indicated that the technique of teaching math appeared to be interesting and made math a little bit easier.

7. What do you think of the map and compass guide used for social studies?

   Approximately 78% were in favor of the use of the map and compass guide used for teaching social studies. They referred to the technique as a "fun" way of learning.

8. Would you like to repeat your School Camping experiences next year?

   91% Yes 9% No

   Approximately 91% would like to repeat the School Camping experiences.

9. List <u>one</u> suggestion to improve the School Camping Project.

   Suggestions offered for improving School Camping experiences were generally varied. Most of the suggestions pertained to non-instructional-oriented activities, and none were noted for curriculum-oriented program. These suggestions included the following:

   - More horseback riding.
   - Improve showers and lengthen shower period.
   - Lengthen duration of School Camping experience.
   - More swimming.
   - More privileges.
   - Camp facilities should be cleaner.
   - Less school work at camp.
   - Better counselors
   - Improve lavatories.
   - Improve cabins.

SUMMARY OF TEACHER RESPONSES ON THE SCHOOL CAMPING PROJECT
1971-1972
(N=25)

1. Listed below are goals of the School Camping Project. You are asked to rate the degree to which the Project has been effective in meeting these goals by putting a check mark (✓) under the appropriate column based on your observations of the children in your classroom following camping experience.

	Most Effective	Moderately Effective	Effective	Not Effective
a. Increasing the children's interest in reading.	13%	33%	38%	16%
b. Developing in children a more positive attitude toward school.	36	32	32	
c. Building children's confidence through experiences of success.	29	54	13	4
d. Strengthening children's informational background.	56	33	11	
e. Broadening children's environmental contacts.	96	2	2	
f. Providing learning experiences which will help sustain the interest of children during the regular school year.	9	59	30	2
g. Bringing pupils and teacher closer together in their understanding of one another.	62	17	21	
h. Orienting pupils toward the relationship of classroom learning and real life.	40	36	24	
i. Improving pupils' ability to get along socially with others.	62	27	11	
j. Increasing pupils' interest in learning.	22	41	33	4
k. Improving cooperation in group activities.	54	33	13	
l. Increasing tolerance or understanding of others.	54	29	17	

The 1971-1972 School Camping Project experience was rated by 25 respondents to be most effective in the attainment of the following four goals:

- Broadening children's environmental contacts.
- Bringing pupils and teacher closer together in their understanding of one another.
- Improving pupils' ability to get along socially with others.
- Improving cooperation in group activities.

2. How many times did your class attend the one-week long school Camp Project during the 1971-1972 school year?

14 Once
-- Twice
-- Three times

Four out of 25 respondents, representing six out of every ten teachers, reported that their classes attended the week-long school camping project during the 1971-1972 school year.

3. Did you accompany your class to camp?

12 Yes 2 No

Twelve out of the 14 respondents (Question #2) accompanied their classes to camp for a week.

4. Which phase of the School Camping Project was most responsive to the needs of the pupils?

The three frequently listed activities reported to be most responsive to pupils' needs included:

- Math lessons on ratio and proportion, and reading materials geared at the level of pupils.
- Evening social hour.
- Cabin and dining hall responsibilities.

5. What place of the School Camping Project was least responsive to the needs of the pupils?

Five out of ten respondents indicated that practically all activities were responsive to pupils' needs. The remaining five respondents listed different activities such as:

- Animal house.
- Lecture preceding the Harriet Tubman experience.
- Riding area.

6. How would you modify it?

Respondents listed the following modifications:

- Eliminate - or clean up the animal house and provide exercise space for the animals.
- Better lighted classroom.
- Let children experience two sessions at camp.
- Little more background concerning slavery and the Civil War.
- Eliminate evening instructional session - increase morning session.
- Provide more horses for student use.

7. What activity of the School Camping instructional program was most responsive to the needs of the pupils?

Respondents listed activities other than the actual activity-related instructional program. These included the following:

- Hiking.
- Mess hall.
- Harriet Tubman experience.
- Horse back riding.
- Visit to the farm area.
- Social activity in the evening.
- Mathematics.

8. What activity of the School Camping instructional program was least responsive to the needs of the pupils?

Eight out of 12 respondents who went to camp indicated that none of the activities could be described as being least responsive to pupils' needs. However, two of the respondents indicated the activities related to the actual instructional program to be least responsive such as the "classroom and the instructional program," "compass study," and the evening classes at 5:30 - 6:30 P.M.

9. How would you modify it?

The following modifications were listed by the respondents:

- Eliminate evening instructional session - increase the morning session.
- More instruction in basic operations (add, multiply, etc.)
- Discourage use of popular and off-color lyrics.
- A second more extended lesson on compass use.
- Have all MES sixth grade classes go to camp at the same time in order to continue instructional program.
- Each class that goes in the fall should return in the spring; two sessions would be great to see improvement if any.
- More rules set up in advance for more fair treatment.
- Pupils would like more camping activities.
- Take materials outdoors on a short hike to make learning experience more realistic.
- Provide more equipment.
- More ethnic, minority and cultural experiences.

10. What needs of students were not met by the School Camping Project?

Seven out of 18 respondents indicated the needs of Project participants were met by the Project activities. However, the following needs were listed by the remaining 11 respondents as being unmet.

- Increasing the desire to learn.
- Need for more time allotted for pupil interaction with regards to human relations.
- Social need to mix with children of a different race.
- Understanding of personal problems, sleeping situations.
- Relating this to the present day troubles of brotherhood with Harriet Tubman experience.

11. Should the program be continued?

Twenty-two out of 25 respondents indicated the need to continue the Project. Some of their comments follow:

- "Feels program is making progress towards objectives; should be some type of meaningful follow-up or follow-through."
- "Camping experience adds much to educating students' increases in environmental experience; awareness of subject matter usage in daily life decision making."
- "Happiness is smiling faces....and hearing a child say, I wish I lived next door to this camp."
- "Wonderful. But too little time; children take at least three days to adjust to change of environment."
- "Experience helped teacher to know class better."
- "Excellent opportunity for inner-city children to expand their environment; cope with personalities different from their teachers and parents; more beneficial if they could experience mixed camp as well as camps of all Blacks or Whites. Noticed growth of some camp counselors."
- "All students have shown some changes for better. Changes show in their relationship with teacher."
- Harriet Tubman experience was great.
- Camping should be extended down to fifth grade so that if a child couldn't have the experience in the fifth grade they could get it in the sixth grade.

APPENDIX 1

SAMPLE OF POSSIBLE CHILDREN'S DICTIONARY

Camping Words			
Flapjack	Pancakes we have for breakfast	Camping and Camp Crafts: whole pan and turned by tossing in air.	(picture)
Mess Hall	Where we eat	Thorndike: place where a group of people eat together regularly.	(picture)
Poncho	Camp raincoat	Camping and Camp Crafts: Rain covering consisting of a rectangular piece of waterproof material, middle for head.	(picture)
Math Words			
pacing (pace)	Taking steps to see how far it is	Thorndike: Walk with regular steps; length of a step in walking; about 2 1/2 feet; measure by paces.	(picture)
ratio	How we compare things.	Thorndike: relative magnitude, quotient; number of times one contains the other.	(picture)

Sample of Possible Children's Dictionary (cont'd.)

Science Words			
igneous	Rock with many colors	Thorndike: produced by fire, intense heat or volcanic action.	(picture)
tadpole	Baby frog	Thorndike: a very young frog or toad at the stage when it has a tail and lives in the water.	(picture)
Social Studies Words			
expedition	A hike to explore the woods.	Thorndike: journey for some special purpose.	(picture)
scale	Place on map that shows distances	Thorndike: size of a plan, map, drawing or model compared to what it represents.	(picture)
terrain	Hills and valleys	Thorndike: tract of land especially considered as to its extent and natural features in relation to its use in warfare.	(picture)

Suggested vocabulary game activities:

WHAT AM I

Children play the game in one large group. One child is selected to give clues. The child gives one clue after another and stops after each clue to give the other children a chance to guess. The child who guesses correctly is up next.

Example:

Child: I am all around and very useful. What Am I?
Others guess: stick ball book
Child: I keep people warm, stack easily. What Am I?
Others guess: wood fire fireplace wood
Child: Four by four by four feet. What Am I?
One child guesses correctly: rick of wood

BUZZ

Children play this game in one large circle group. Moving from child to child around the circle each child counts and states his word according to the same classification. When the number seven or multiple of seven comes up the child must say Buzz and next child states a word starting a new classification. A child is out if he forgets the place to say Buzz, fails to start a new classification or remains in the same classification.

Example:

1 owl, 2 robin, 3 eagle, 4 duck, 5 hawk, 6 chicken, 7 Buzz, 8 cabin, 9 dormitory, 10 capers, 11 mess hall, 12 tent, 13 camp, 14 pond (child is out) (next child) 14 Buzz, 15 donkey, 16 horse, 17 Buzz, 18 beech, 19 maple, 20 sycamore, 21 Buzz, etc.

The children can play until only one child is left or in a larger group they can decide to stop at a definite time.

I SPY

This is a good game for pupils to play while going on a hike. The teacher designates one child to spy something he sees giving one specific clue at a time allowing the others in the group to guess what he spies. The game can be played in one large group or in pairs as children move about the camp.

LETTER WRITING ACTIVITIES

PURPOSES

To practice writing letters motivated by desire to communicate with family and friends at home

To develop a pride in the ability to communicate in written form

ANTICIPATED OUTCOMES

1. Ease in communicating in written form
2. Continuity of home and family relationships while away from the home environment
3. Develop an interest in letter writing for future use

SUGGESTED PROCEDURES

1. Review format of friendly letter writing and proper method of addressing envelopes (see samples)
2. Discuss ideas which will make letters interesting
   (a) Unusual experiences at camp
   (b) Different schedule
   (c) Ways school camp is different from regular school
   (d) Observations
   (e) Amusing incidents
   (f) Interesting people
   (g) Impressions of the environment
3. Review techniques used in written communication
   (a) Use of complete sentences
   (b) Correct punctuation and capitalization
   (c) Use of dictionary for better spelling
   (d) Organization of thoughts in time or space order to form good paragraphs
   (e) Proofread for accuracy
4. Stress proper letter forms in handwriting, urging neatness as well as accuracy.

WRITING ARTICLES

I. Discussions should create the interest in each child to write an article about his most interesting experience at camp school The teacher can use this opportunity to guide them in organizing and writing up the topic. The following steps are suggested:

   A. Select a topic
   B. Make a list of impressions using phrases
   C. Arrange phrases in outline form for paragraphing
   D. Using the phrase outline as guide to complete the article thinking about good sentence structure, proper grammar, punctuation, spelling, etc.

II. Creative writing

   A. Many children may be inspired to write short stories, poems, riddles, or characterizations that are based on what they have seen or that are purely imaginary. Encourage them to do so.

   B. Give an opportunity for them to read their works to each other. This may stimulate others and help each one to evaluate his own efforts.

(See Sample)

SAMPLE OF POSSIBLE CHILD'S STORY

STEP ONE: List of simple phrases noting impressions gained from experience.

The All Camp Cook-Out
everyone all together
carried logs to hill
gathered twigs and grass
another class brought food
hot dogs, marshmallows, apples
fire hot and smoky
put hot dogs on long sticks
Jim rubbed sticks together
blew on kindling to start fire
sat in large circle around fire
woods very dark
sang as we marched

STEP TWO: Arrange in outline for paragraphing

The All Camp Cook-Out

I. The Cook-Out
   - A. Huge fire
   - B. Clear, starry night
   - C. All classes there

II. Everyone Helped
   - A. Our class in charge of fire
     1. boys carried logs
     2. girls gathered twigs and grass
   - B. Another class brought food
     1. hot dogs, rolls
     2. apples, marshmallows
     3. milk
   - C. Clean-Up Committee
     1. stay after
     2. put out fire

LIBRARY ACTIVITIES

PURPOSE

To stimulate pupils to read books found in the camp library for both recreation and specific information.

To provide opportunities to share books through book talks and panel discussions of a variety of books.

ANTICIPATED OUTCOMES

1. Foster a continuous habit of reading books of interest for recreational purpose or specific parts of books for additional information.
2. Promote an interest in sharing books or parts of books with others.
3. Provide a guide for recreational reading in a setting where many activities are taking place.

SUGGESTED PROCEDURES

Have the children select books from the camp library for specific information relating to what they have been learning in social studies, science, etc. Books may be shared and specific information reported to others during special subject periods.

Have child select at least one book from the camp library to read for recreational purpose.

Encourage the children to give book talks to class on books they are reading. Set up standards for good book talks. A suggested list might be:

A. Introduce your talk in an interesting way.
B. Tell the title, author, setting, and main characters.
C. Briefly tell the main idea of the story.
D. Tell about an enjoyable part in the story.
E. Read an oral passage and display pictures found in the book.
F. Tell why you read passage.
G. Conclude your talk stating your opinion of the story.

APPENDIX 2

PIONEERING ACTIVITY

Purposes:

1. To recall history of pioneering and exploration relating these abstractions to a concrete environment
2. To find solutions to problems of meeting daily needs in a limite environment

Anticipated Outcomes:

1. Better understanding of the history of our country
2. Apprec ation of the problems people face in meeting basic needs of daily living in an environment at any time

Suggested Procedure: LET'S GO EXPLORING

1. Set the scene by discussing reasons for expeditions into unknown lands.
    - A. Desire for knowledge
    - B. Surveying and mapping
    - C. Business enterprise
    - D. Adventure
    - E. Better living conditions
2. List considerations necessary in planning such a journey.
    - A. Mode of transportation
    - B. Equipment needed (available and portable)
    - C. Duties of each individual
    - D. Need for leaders
    - E. Possible dangers
3. Divide the class into groups according to selected purposes.
    - A. Exploring and mapping unknown
    - B. Commercial — fur trade, land speculation, logging, mining
    - C. Missionary
    - D. Settlement
4. Have each group meet to choose leaders and detail plans. (See above 2a, 2b, 2d.)
5. Take a hike having the children observe, make notes and maps to fit their purpose.

6. In the summary session, discuss the findings, leading the children in comparing these to their own lives. (See sample guide questions.)
7. OPTIONAL: Have children dramatize part of their expedition.
8. OPTIONAL: Have children write their experience as a creative writing lesson.
9. OPTIONAL: Have children make sketches or drawings.

SAMPLE GUIDE QUESTIONS FOR DISCUSSION OF EXPLORATION EXPERIENCE

1. What obstacles were encountered?
2. How did you meet the basic needs of daily living (food, water, shelter, safety)?
3. What people did you meet? Were they friends or foes? How did you deal with them?
4. Was your expedition successful according to your purpose? Why or why not?
5. Did your leaders assume responsibility?
6. How did each member of the group get along with the others?
7. Compare the way pioneers solved their problems to how we solve ours today.
8. Compare your feelings about coming to camp with how a pioneer settler may have felt.

MAP MAKING ACTIVITY

Purposes:

1. To make a map of the camp area
2. To practice use of map symbols showing types of land forms, bodies of water, distances in scale

Anticipated Outcomes:

1. Knowledge of the meaning of map symbols
2. Understanding of distances in scale relationships

3. Comprehension of written abstractions representing concrete objects
4. Appreciation of problems faced by pioneers and explorers in mapping their trails

Suggested Procedures:

1. Divide class into small groups for exploring and observing camp areas.
2. Discuss types of information to be shown on the map. (trails, terrain, rivers, ponds, waterfalls, hills, rocks, etc.)
3. Decide on symbols to be used to indicate findings.
4. Take a hike making notes and sketches of observations, pacing distances, and establishing cardinal directions.
5. Have groups of children draw large maps (on paper or on sandy ground) using notes for reference.
6. In a discussion, lead the children to compare their map-making experience to that of early explorers or pioneer surveyors.
7. OPTIONAL: Have each child draw a smaller map in his notebook.
8. OPTIONAL: Compare children's maps with commercial ones to strengthen map reading skills.

Note to Teacher: As map making is a highly skilled technique, stress the child's own concepts and observation skills rather than striving for scientifically accurate maps.

CURRENT EVENTS ACTIVITIES

Purposes:

1. To use a newpaper, or a radio, or an interview, or an eyewitness observation of events to gain information about daily news
2. To develop reading comprehension and listening skills
3. To summarize and report conclusions briefly and logically

Anticipated Outcomes:

1. Awareness of the multitude of features in a daily newspaper (news reports, editorials, commentaries, sports, homemaking, personal, and health advice, weather, comics, editorial cartoons, amusements, classified ads, advertisements, etc.)

ONE OF SOCIETY'S BASIC NEEDS IS SOME FORM OF GOVERNMENT

Basic Concepts:

1. Rules are necessary in a society.
2. Rules safeguard the interests of the individual and the interests of the group.
3. In a democracy, leaders and followers are necessary.

Suggested Procedures:

1. By discussion try to bring out the basic ideas of government. Use guide questions such as:
    - A. Why are rules necessary?
    - B. How are rules made so as to be fair to everyone?
    - C. In what ways do rules help an individual?
    - D. What are the general functions of a government which serve the interests of the group?
2. Set up a town meeting type of government in class units or cabin units. Use guide questions such as:
    - A. Why is a leader necessary in a town meeting?
    - B. What rules for conducting the meeting need to be established?
    - C. How can the rules benefit both the individual and the group?
    - D. Could the town meeting form of government be conducted for the whole camp? Why or why not?*
    - E. How could each class have a voice in the camp government?

*This topic might later be enlarged upon as a debate topic.

3. Discuss the meaning and structure of representative government.
    - A. Compare representative government with town meeting form.
        1. What are advantages of each form?
        2. What are disadvantages of each form?

SOLVING SOCIAL PROBLEMS

Note: Using discussions, dialogues, or role playing, lead the children to a recognition of the existence of many problems which must be solved in any group living experience. Help them to relate this understanding to their daily life at camp and at home. Following is a suggested outline of content and samples of guide questions.

1. Problems of facing a new life for the first time
    - A. How did you feel about coming to camp (or living away from home) for the first time?
        1. What fears did you have?
        2. What did you look forward to eagerly?
        3. What problems did you have to solve?
        4. In what ways were these similar to other children's problems?
    - B. How does sharing similar experiences (eating, playing, studying, working and planning together) enable strangers to become better acquainted?
        1. Did you help each other? How?
        2. What qualities in other children helped them get along with you? (and vice versa)
        3. Why must the property rights of each individual be respected?
        4. Is it important that each child contribute to the group? In what ways? Why?
        5. How can you help a child who may not be doing his share?
    - C. Compare your experiences to what pioneer families must have faced in going to an unknown environment.
        1. Did the pioneers have similar or different problems to solve?
        2. How did they cooperate in building homes, clearing land, finding food, etc.?
        3. How did the pioneer men and women meet the needs of their community (safety, health, government, etc.)?

4. How do you and your family meet your community needs?

2. Problems of providing for basic needs in different environments and at different times

A. Investigate the ways in which the camp provides for basic needs.

1. How is water, or fuel, or power obtained?
2. From what sources is food for the camp supplied?
3. How do campers obtain their clothing?
4. How were the shelters built?
5. Contrast these with pioneers. Why was it different?
6. Compare with how these needs are met back home.

B. Consider the community problems we face in a modern city as compared to pioneers' problems.

1. What problems did the pioneers have that we do not have? Examples: production of goods, transportation, communication, education, etc.
2. What problems have we that did not concern the pioneers? Examples: polluted water, polluted air, traffic accidents, crowded housing, etc.
3. How should we try to solve our present day problems? Could they have been avoided? How?

Suggested Follow-up Activities:

1. Debate: RESOLVED: It is better to be living today than during the days of the pioneers.
2. Dramatization showing how a pioneer community helps provide a home for a family who has just moved into the area, then follow this up by one showing a present day group of children welcoming newcomers to the community.
3. Panel discussion comparing problems of security in a pioneer community to how we meet our problems in our city.
4. Conduct a press conference at which campers are interviewed by prospective campers.

SOCIAL STUDIES ACTIVITY

YOUR PLACE

PURPOSE:

To show an individual's place in the structure of our government.

ANTICIPATED OUTCOME

Understanding that one citizen is the basic unit in a representative democracy.

Appreciation of one's worth as part of a whole.

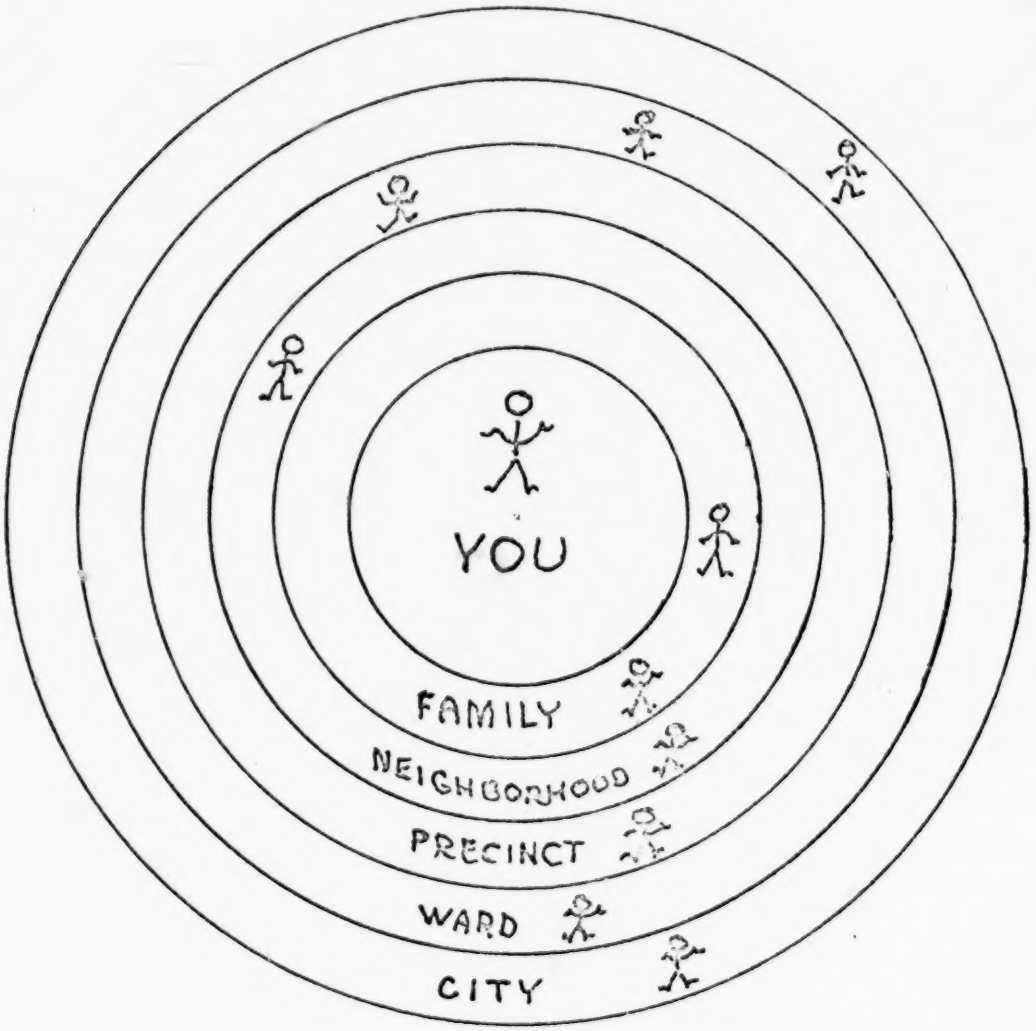
SUGGESTED PROCEDURE

1. Choose a child to represent each of the units listed below. Titles may be written on cards or sentence strips and be picked at random.
2. Draw a box or circle (on floor with chalk or on ground with a stick). Have the child symbolizing the "individual" stand in the center box.
3. Let the children who represent each of the succeeding units come up in turn and draw an enclosing circle and take his place within it.
4. If a child comes up at the wrong time, another child may challenge him and he will lose his turn.
5. When all circles are completed, have the children summarize saying, "An individual is part of a family." "A family is part of a neighborhood." etc.

ALTERNATIVE: Draw concentric circles on blackboard, and have children write in the names of the units.

YOUR PLACE — LIST OF UNITS

1 - Individual (or YOU)
2 - Home or family
3 - Neighborhood
4 - Precinct
5 - Ward
6 - City (or village or town)
7 - County
8 - Congressional District
9 - State
10 - Country (or nation)
11 - Continent
12 - Hemisphere
13 - World (or earth)
14 - Solar system
15 - Galaxy
16 - Universe



APPENDIX 3

OPERATING EXPENSES

OBJECTIVES	SUGGESTED PROCEDURES	SKILLS DEVELOPED	ANTICIPATED OUTCOME
To determine School Camp Operating expenses To determine other camp costs	1. Discuss with students the possible sources of clothing and equipment. 2. Discuss the costs of food and shelter for families of different sizes. 3. Prepare a budget with children for a week at camp. 4. Give practice in solving various problems pertaining to operating costs.	1. Use of open sentences. 2. Fractional parts 3. Estimations 4. Reading dollars and cents	1. An appreciation for costs of clothing 2. Practice in analyzing and solving one-step and two-step problems 3. A contact with the economics of operating a camp

SUPPLY COST LIST

Damp Weather

Sweatshirts	$ 2.25 ea.
Ponchos	1.50 ea.
Boots	2.15 per pair

Linen - per week

Sheets	$ .21 ea.
Towels	.09 ea.

RATIO

OBJECTIVES	SUGGESTED PROCEDURES	SKILLS DEVELOPED	ANTICIPATED OUTCOME
To develop the concept of ratios	Introduce ratio as a method of comparing two numbers by an indicated division	1. Distinguishing between proper and improper fractions	1. A positive awareness of using numbers for comparison
To gain some insight into the differences in background of people who make up our society	Note: The term quotient is frequently used for rational numbers like 3/4 or 5/8 which are indicated divisions. This is the way the term quotient is used in connection with ratio.	2. Regrouping denominate numbers 3. Using common fractions for comparison 4. Using ratio for comparison	2. Respect, acceptance, and tolerance for differences in others 3. A positive awareness of a need for understanding fractions 4. A practical application of denominate numbers

RELATED ACTIVITIES

Lead the students in discussions and interviews with each other; i.e. family structure, religious affiliations. This should develop an understanding of the many important differences and contributions to our society made by ethnic groups.

ILLUSTRATIONS

Students could easily become interested in finding out how many different ethnic groups there are in Cleveland's population. They could then compare the size of different groups using ratio. Many groups may be represented in the camp society, i.e. Italian, Slovak, Chinese, Negro, German, etc.

OBJECTIVES	SUGGESTED PROCEDURE	SKILLS DEVELOPED	ANTICIPATED OUTCOME
	To find the ratio of a pair of numbers that represent units of measure, both numbers of the pair must be expressed in the same unit of measure.		

RELATED PROBLEMS

5. Mary is 48 inches tall; Ann is 5 ft. tall. What is the ratio of Mary's height to Ann's? Ann's to Mary's?

ILLUSTRATIONS

Change 48 inches to 4 ft.

$\frac{4 \text{ ft.}}{5 \text{ ft.}} = \frac{4}{5}$ or 4 to 5

$\frac{5 \text{ ft.}}{4 \text{ ft.}} = \frac{5}{4}$ or 5 to 4

Measurement of one child pacing distance three times:

1st		2nd		3rd				
50 1/2	+	49 3/4	+	49 1/2	=	149 1/2	=	Total number of paces
				149 1/2 ÷ 3	=	49 5/6	=	Average number of paces
				49 5/6	=	50	=	Approximate number of paces
				100 ÷ 50	=	2 ft.	=	Length of one pace (child's)

RELATED PROBLEMS

1. Ben paced the distance from his cabin to the mess hall 3 times. On his first attempt he counted 102 1/2, second attempt 101 3/4, and third attempt 102 3/4 paces.

   How many feet is Ben's cabin from the mess hall?

ILLUSTRATIONS

102 1/2 + 101 3/4 + 102 3/4 = 307

307 ÷ 3 = 102 1/3

Rounded off to nearest pace = 102

102 X 2 1/4 ft. = 229 1/2 ft.

229 1/2 ft. = 230 ft.

Note: When the distance between points is not known in feet, use the standard 1 pace = 2 1/4 ft.

MAP MAKING

(Drawing a Map)

OBJECTIVES

To teach basic map making

To develop a need for map reading

To aid in acquainting children with unfamiliar areas

SUGGESTED PROCEDURES

1. Draw a large circle or other suitable shape to mark an outline of the total area to be mapped.
2. Indicate cardinal directions and distance scale in a key or legend.
3. Draw symbols to show landmarks.
4. Use broken lines to show trails; solid lines for roads; wavy lines for streams.
5. Determine distances between main points on the maps by pacing off distances and recording on the maps, i.e. see page for converting paces to feet.

SKILLS DEVELOPED

1. Drawing to scale
2. Using ratios
3. Map reading
4. Comparison of distances
5. Conversion of paces to feet

ANTICIPATED OUTCOME

1. The ability to apply measuring technique to real life situations.
2. The ability to apply and relocate maps to real real life

APPENDIX 4

INTRODUCTION

1. Emphasize the importance of not destroying any plants, animal life, or rock formations found on the camp premises. Check with camp authorities as to what the children may collect.
2. Teach the children the importance of silence and patience in observing any animal life.
3. Always be on the lookout for the unusual on any field trip that you take. Be ready to change your plans. Unusual happenings might include:
    a. Ducks or geese landing on pond
    b. Sighting of deer, raccoon, etc.
    c. Unusually large swarms of migrating birds
    d. Spring thunderstorm
    e. Evening meteor shower (check newspapers)
    f. Full moon in the early evening
4. Allow children to make sketches of what they see — trees, birds, rock formations, etc.
5. Make use of the Polariod camera to record events of your trip. These might be used as follow-up material after your return from camp.
6. Movies and filmstrips will be available to you. Use these for reinforcements or as rainy day activities. Primarily plan your teaching to most effectively use the resources of the SCHOOL CAMP.
7. Make use of the overhead projector. Silhouettes of leaves can be projected on screen by simply placing leaf directly on projector glass.
8. An attempt will be made to have science supplies, textbooks and courses of study available to you at a designated central location.

HOW TO COLLECT AND CARE FOR SPECIMENS

Note:

Below is information that should prove valuable in the collection and care of rocks, insects, feathers, leaves and animals.

Materials Needed:

Hammer (geologist's or carpenter's), chisel, newspapers, cloth bag, notebook and pencil, guidebook such as Rocks and Minerals by Zim and Shaffer, Simon and Schuster, 1957.

What to Look For	How to Collect	Care of the Collection
ROCKS with interesting colors, streaks, shapes; rocks containing clear and colored crystals; rocks with fossils	Use hammer and chisel to collect samples about the size of walnuts. Be careful of flying chips. Do not collect too many specimens. Be selective. Wrap each rock in newspaper. Before wrapping, assign number to the sample. Use a numbered piece of adhesive tape to do this. In a notebook, write this number down and after it, write the date, place collected, and kind of rock if known. Place samples in cloth bag.	Place specimens in compartmentalized trays. Use egg cartons or plastic trays. Number samples. Make 3x5 index cards to correspond with the numbers. On each card show the number of the rock, date, place collected, kind of rock, and name of collector.

ROCKS AND MINERALS

Note: Any rocks found by boys and girls while on a nature study hike will fall into one of these three categories:

a. Igneous, meaning heat-made

b. Sedimentary, meaning water deposited or sometimes wind deposited

c. Metamorphic, meaning changed by heat and pressure

In order to make a rock collecting hike more rewarding, this procedure is recommended:

Materials Needed:

Several samples of igneous rock, hammer, hand lens and or microscope

---

PROBLEM I

Why are crystals of the same minerals larger in some rocks than in others? How does the rate of cooling affect the size of crystals in an igneous rock?

PROCEDURE

1. Using a hammer, break several samples of igneous rock.
2. Using a hand lens or microscope, compare the size of crystals in the samples.

CONCEPT

1. Rocks that cooled quickly will have small crystals.
2. Rocks that cooled slowly will have large crystals.

WEATHER

Following is a list of suggestions for problems to be developed, experiments and activities which lend themselves to the problems, and devices and equipment that should be easily obtained for the development of concepts.

Camp sites and woods settings are excellent for forming concepts about weather. To aid in developing this unit while at camp, we suggest the theme "WEATHER STATION".

Note: Materials such as straws, paper plates, plastic spoons, milk cartons, paper cups, glass jars, paper bags, cardboard boxes, and metal cans should be easily obtained from the camp cook. Teachers should bring with them such materials as masking tape, assorted strings, rulers, assorted corks, candle wax, rubber bands, assorted screws, nuts and bolts. While pre-camp planning, select a child or group of children to collect and prepare materials for projects.

PURPOSE

1. To arouse interest in the study of weather
2. To foster observation
3. To become aware of weather reporting

PROCEDURE

1. Allow time for discussion of questions such as: How do we know if the weather is going to be fair or rainy? Are you sure what the weather will be like after you hear a report? What are some of the things that weather scientists do to predict what the weather will probably be?
2. Before attacking problems pertaining to weather, lead the students in selecting an area that is easily accessible to all and one that can be viewed by all areas, such as the grounds facing the dining hall, all camp assembly sections, or central cabin areas.

ASTRONOMY

Note: This is a rare opportunity for the classroom teacher to actually observe the sky with his class. Objects of interest might be the moon, when visible at a reasonable hour, the Big Dipper and North Star, the Milky Way, and meteors.

Materials Needed:

Telescope, binoculars, star charts

PROBLEM I	PROCEDURE	CONCEPT
What are constellations?	Before actually observing night sky have children make pictures of various constellations by perforating heavy sheets of construction paper with a pencil to conform to constellation patterns. Use star books or star charts for names and star patterns. Show children's work on overhead projector.	1. Constellations are patterns that create imaginary pictures in the sky. 2. Constellations are helpful to us in locating various stars.

Materials Needed:

Telescope, binoculars, star charts

PROBLEM II	PROCEDURE	CONCEPT
Why is the North Star almost due north?	1. With a globe or ball demonstrate to children that the North Star is the closest significant star to an imaginary continuous extension of the earth's axis. 2. With chalk, draw the Big Dipper on the underside of an open umbrella, so that the pointer stars point to center of the interior of the umbrella. Call the center the North Star. Then have children rotate umbrella over their heads. Prove that the North Star does not change position.	The North Star is a good way to find north because it is always in the northern sky.

Materials Needed:

Telescope, binoculars, star charts

PROBLEM III	PROCEDURE	CONCEPT
Why is the Big Dipper important to us?	The Big Dipper is a star grouping in the constellation Ursa Major.	1. With the aid of the Big Dipper we can find the North Star.

CONSERVATION

OBJECTIVE

To teach the students how we can use conservation as a study of interrelationships between living things and their environment

To show that people are resources because they can give service; that people rely on each other for service.

To see if people in your community all have a chance to be healthy and happy through good outdoor recreation

To get the wisest and fullest benefits from your clothing, food, water.

PROCEDURE

Approach this concept from Webster's definition of conservation being con, meaning "together" or "with", joined to the Latin verb servare, meaning "to guard, take care of, preserve". Begin with the students where they are in developing positive attitudes about the wise use and care of personal articles, their home, yard, school, and contributions of others.

CONCEPT

People must work together for better and wiser use of natural resources in order to have all of the modern conveniences that make life more enjoyable for all.

From: A Source Book For Elementary Science by Joseph Victor Hone, Brandivein, 1962.

USING THE MICROSCOPE

Materials Needed:

Microscope (preferably a good low power 100X), glass slides, cover glass, medicine dropper, razor blades, beakers or jar. (Note: Beginners are often disappointed by what they can see with a microscope because they try to look at material that is too thick or too large.)

PROBLEM

What are plant cells?

Introductory: Compare the differences in shapes of onion cells to those of plants you find in the woods. Compare the nucleus of onion cells to those of other woods plants.

PROCEDURE

I

1. Make a razor cut anywhere on the onion.
2. Starting from the cut peel off the thinnest possible layer.
3. Place the skin on a slide and with a medicine dropper add one drop of water.
4. Drop a cover slip on the water.
5. Place specimen under microscope and focus it.
6. Record your findings using illustrations if possible.

II

1. Stain a thin piece of onion skin with iodine diluted in water.

CONCEPT

Plants like animals are made up of billions of tiny cells with definite shapes and specific functions.

PROBLEM	PROCEDURE	CONCEPT
	2. Place a cover glass over the slide and allow it to set for five minutes. 3. Focus it under the microscope and record your findings.	

Materials Needed:

Large pop bottle, jump rope or clothes line

PROBLEM	PROCEDURE	CONCEPT
How far above horizontal have the rock structure or layers in the local area been warped? What forces caused the warping?	1. While hiking look for areas where the bedrock has been exposed. 2. Hold a rope level against the rock mass or hill. 3. To make sure the rope is level compare it to the level which the water seeks in the pop bottle (See illustration)	The layers of rock must have been horizontal, since they were deposited as sediments by the water which covered the area. Tremendous heat and pressure beneath the earth's surface bends rock layers.

Materials Needed:

Microscope, glass slides, cover glasses, razor blades, plant leaves (preferably plants with thick leaves), tweezers, vaseline

TREES

Materials Needed:

Notepad, pencils, hand lens, stereomicroscope

PROBLEM I	PROCEDURE	CONCEPT
How can we learn to identify trees?	Emphasize the importance of bark, flowers, and buds as leaves may not be fully developed in early May. Place emphasis on beech and maple trees. See Teacher's Guide, Trees, Grade 5, pp. 21-30 for identification aids.	Threes may be identified by their: 1. Leaves 2. Trunk a. Shape depends on how many twings grow upward. b. Depends on whether it is growing in an open field or woods. 3. Bark 4. Flowers 5. Seeds 6. Arrangements of leaves 7. Buds

Materials Needed:

Notepad, pencils, hand lens, stereomicroscope

PROBLEM II	PROCEDURE	CONCEPT
How do forests help us?	1. Examine soil on steep forested	1. Forests prevent soil erosion.

FISH, AMPHIBIANS, AND REPTILES

Of all the animals these cold-blooded ones are the ones that usually receive first attentions from the children because they are uncommon and unusual. Minnows, crayfish, frogs, roads, snapping and painted purtles, garter snakes, milk snakes and water snakes may be found around the camp.

PROBLEM	PROCEDURE	CONCEPT
How do frogs grow?	Collect tadpoles, place in glass jar for observation. Tadpoles need no food until they start growing. They will need "green water" containing algae and other growing water plant material. When legs are almost complete and the tails are almost gone, feed them earthworms, soft insects, flies, grasshoppers and crickets. When tadpole becomes a frog arrangements should be made so that he can climb out of water.	Frogs can be raised if kept in a natural environment.